Fig. 1 (prior art)

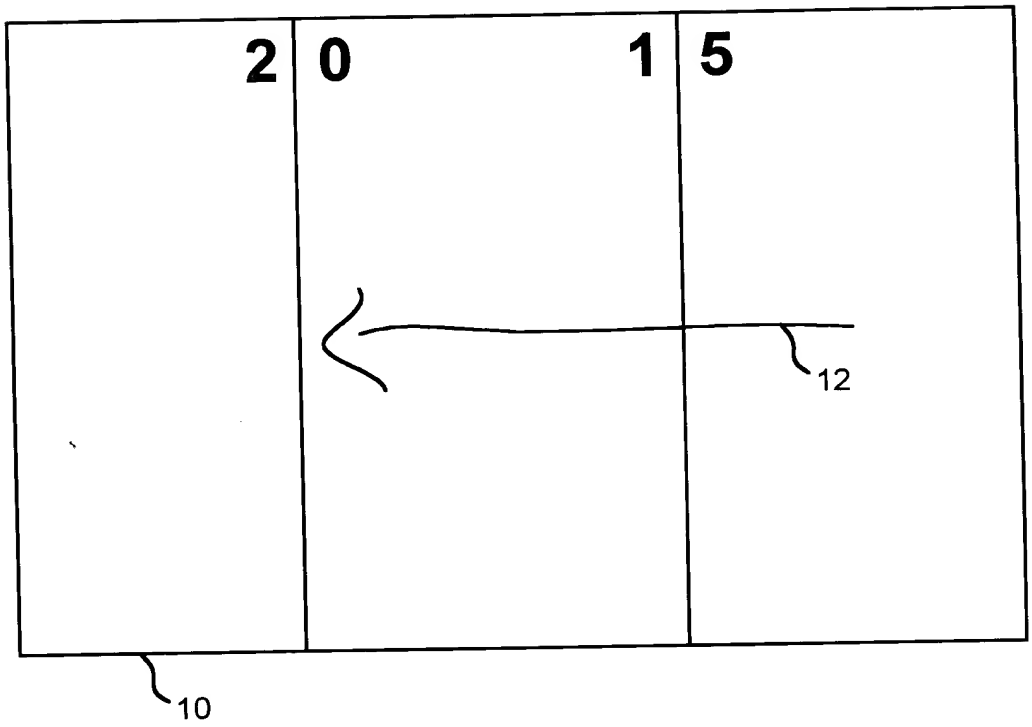


Fig. 2 (prior art)

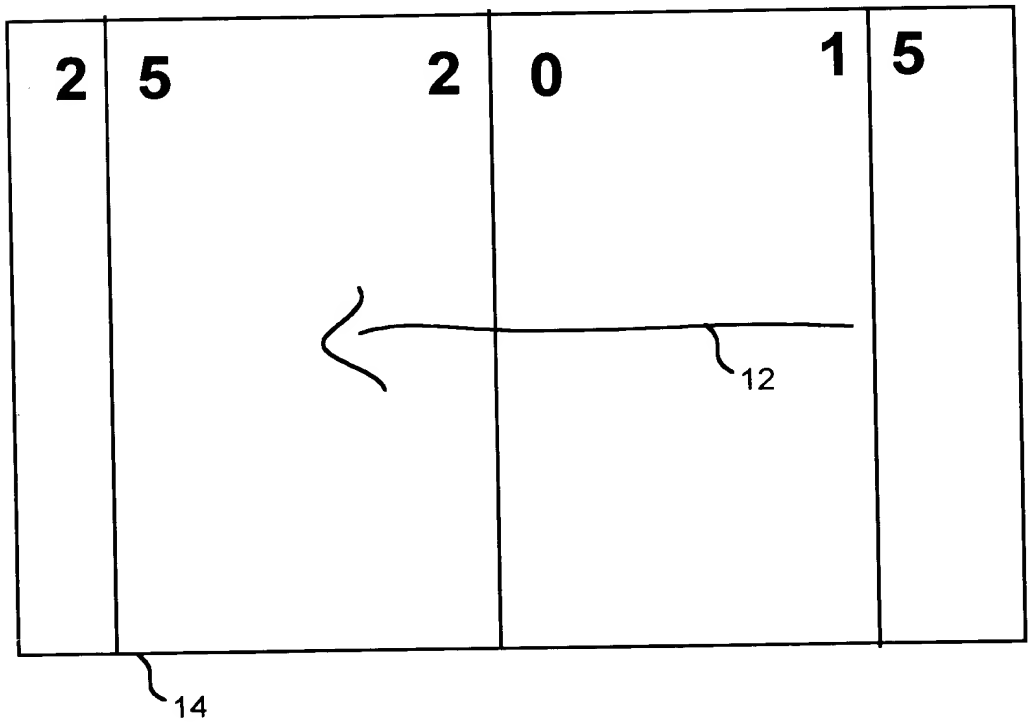


Fig. 3

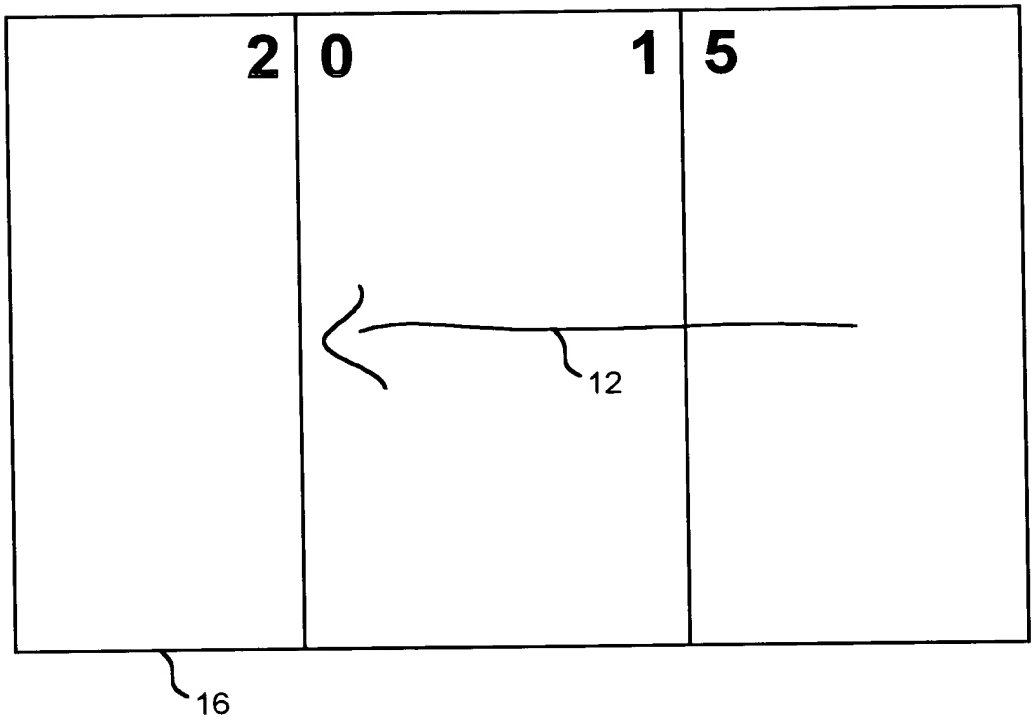
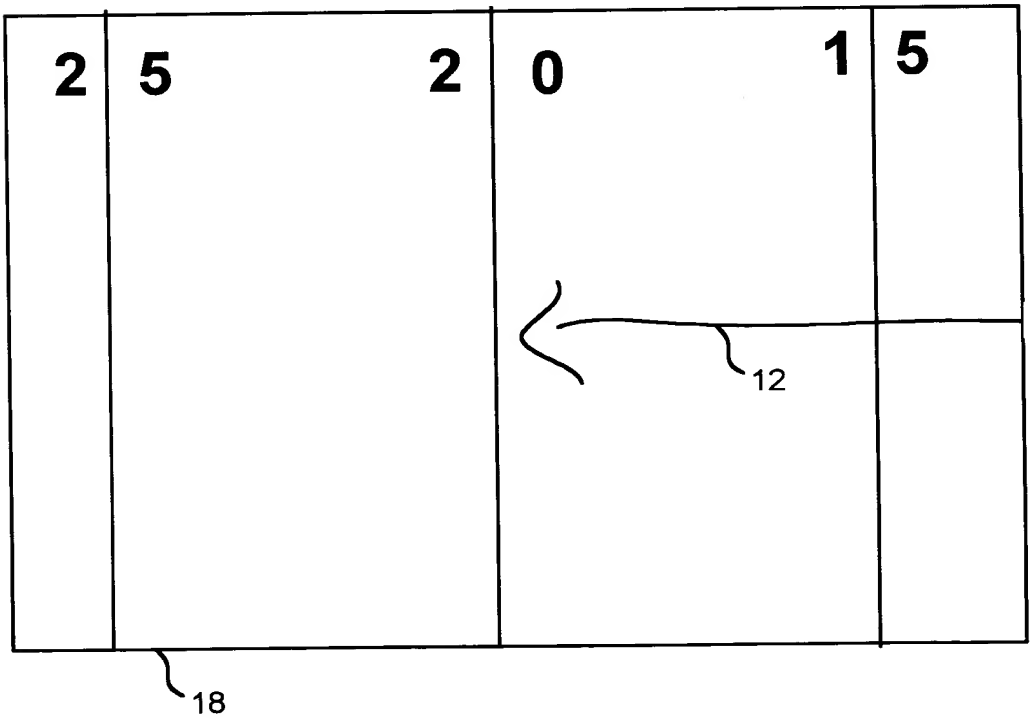


Fig. 4



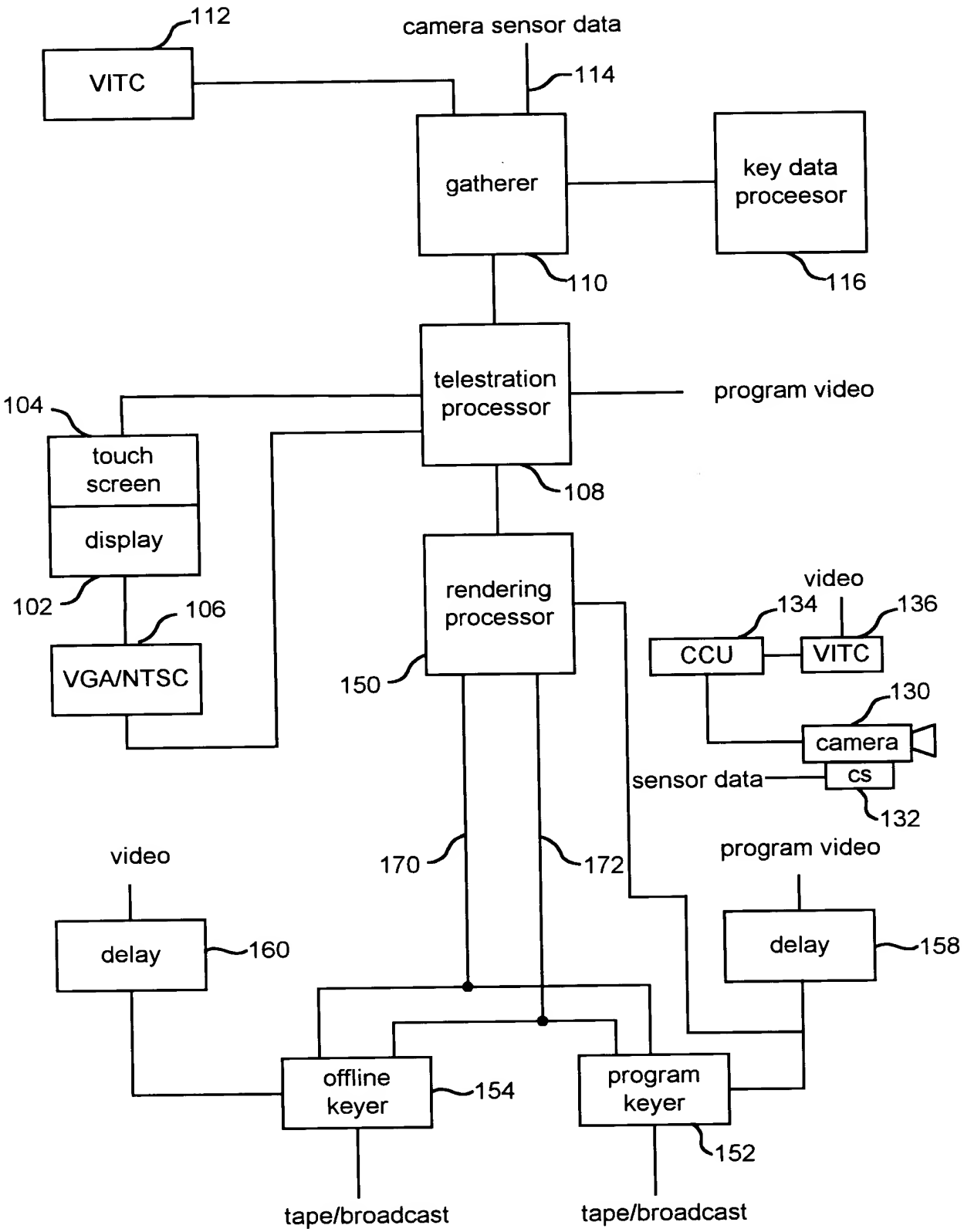

112
VITC
camera sensor data
114
gatherer
key data proceesor
110
116
telestration processor
program video
104
touch screen
display
108
102
106
VGA/NTSC
rendering processor
video
134
136
CCU
VITC
150
130
camera
sensor data
cs
132
video
170
172
program video
delay
160
delay
158
offline keyer
154
program keyer
152
tape/broadcast
tape/broadcast

Fig. 5

Fig. 6

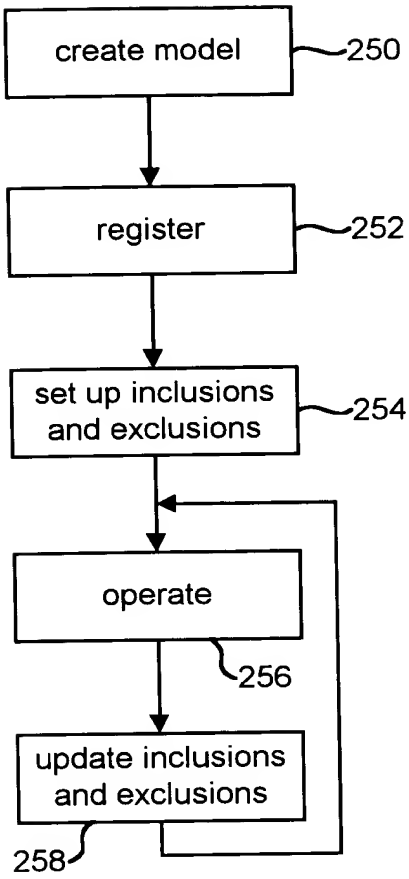


Fig. 11

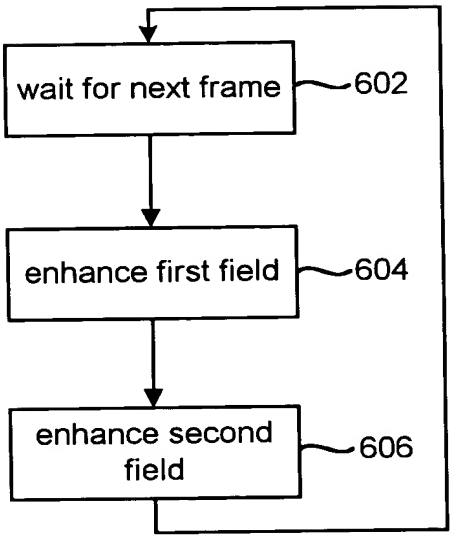


Fig. 12

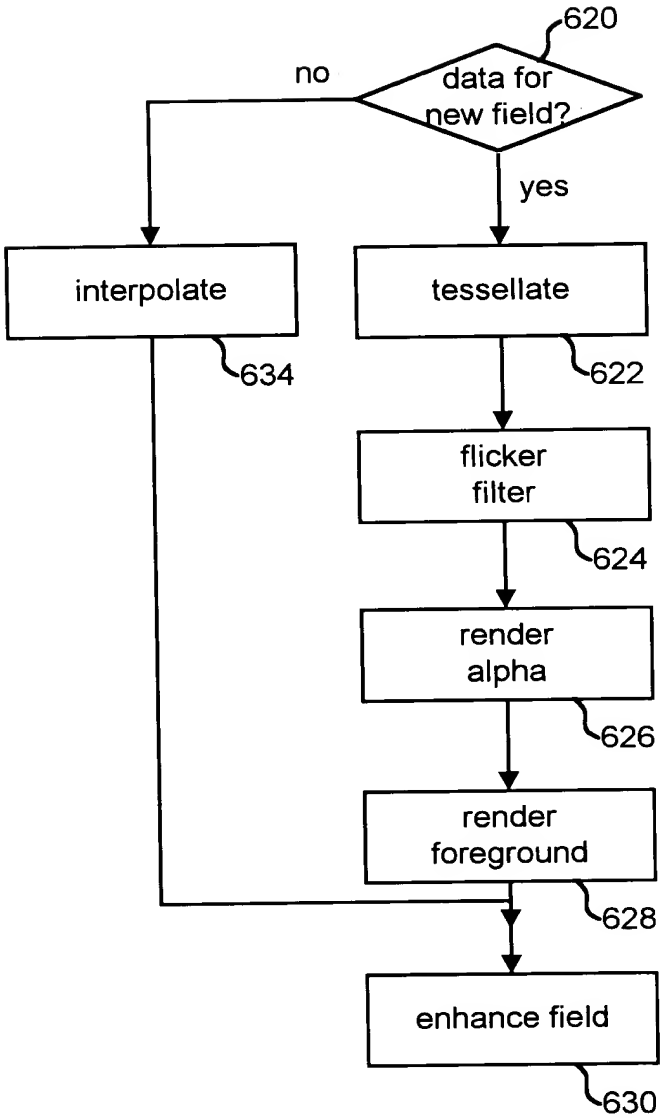


Fig. 7

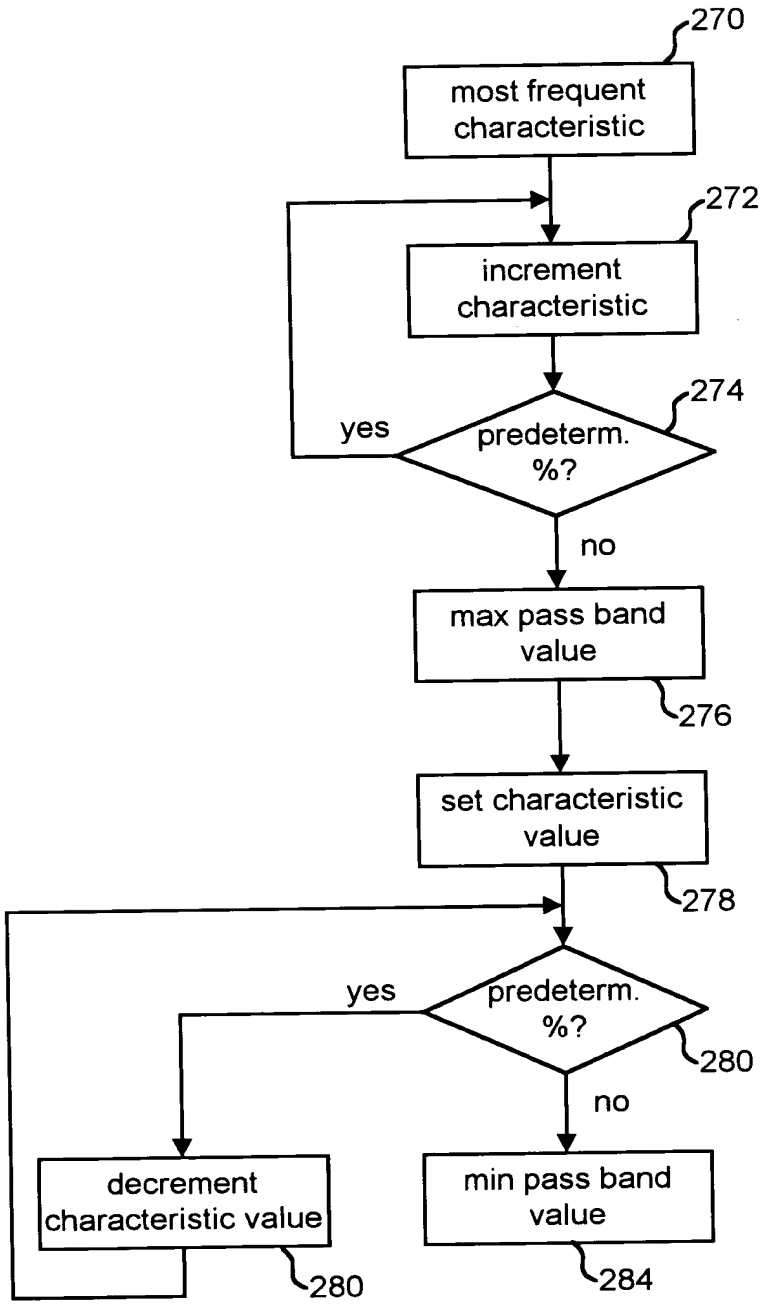

270
most frequent characteristic
272
increment characteristic
274
yes
predeterm. %?
no
max pass band value
276
set characteristic value
278
yes
predeterm. %?
280
no
decrement characteristic value
280
min pass band value
284

Fig. 8

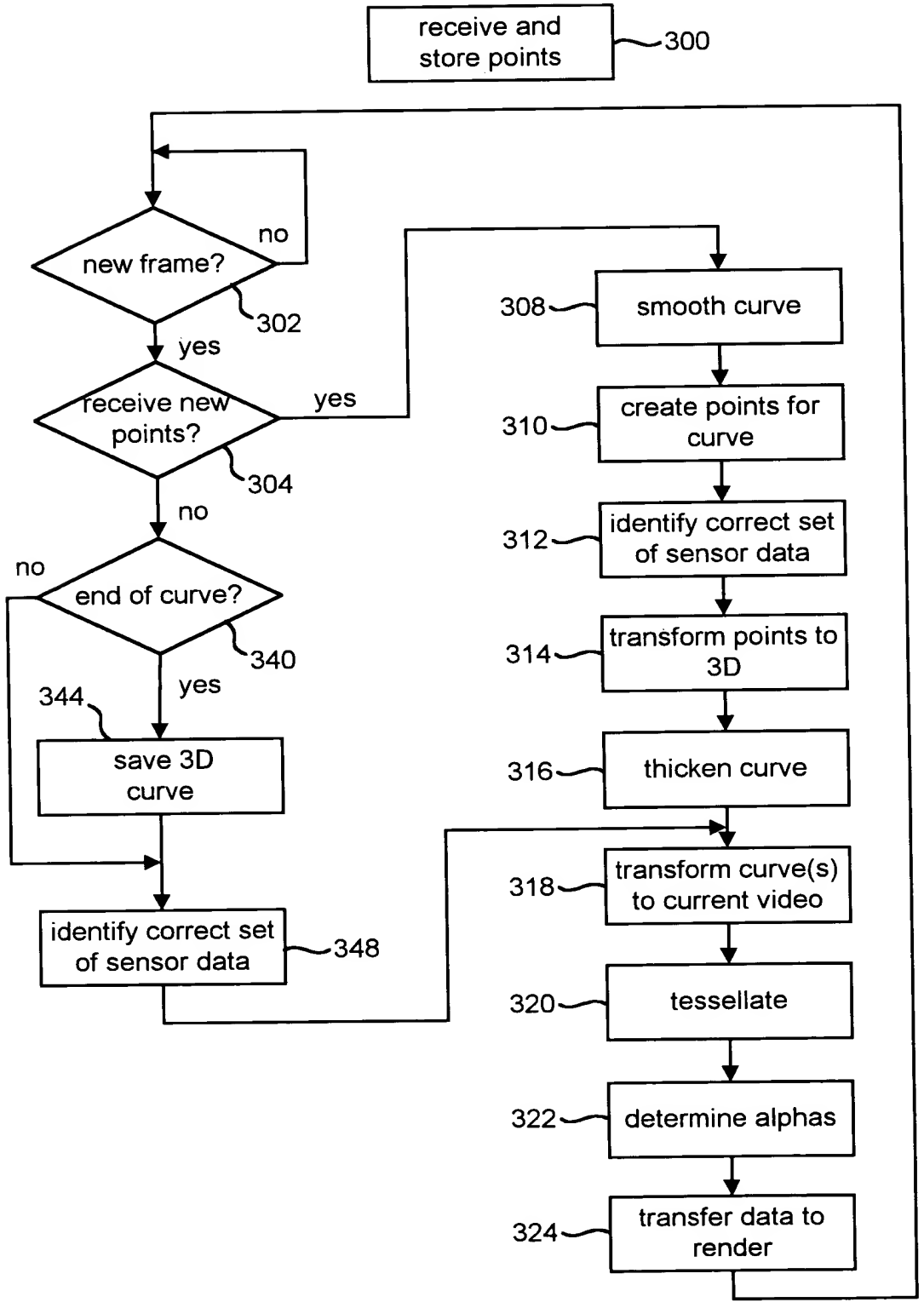

receive and store points
300
new frame?
no
302
yes
receive new points?
yes
304
no
end of curve?
no
340
yes
344
save 3D curve
identify correct set of sensor data
348
308
smooth curve
310
create points for curve
312
identify correct set of sensor data
314
transform points to 3D
316
thicken curve
318
transform curve(s) to current video
320
tessellate
322
determine alphas
324
transfer data to render

Fig. 9

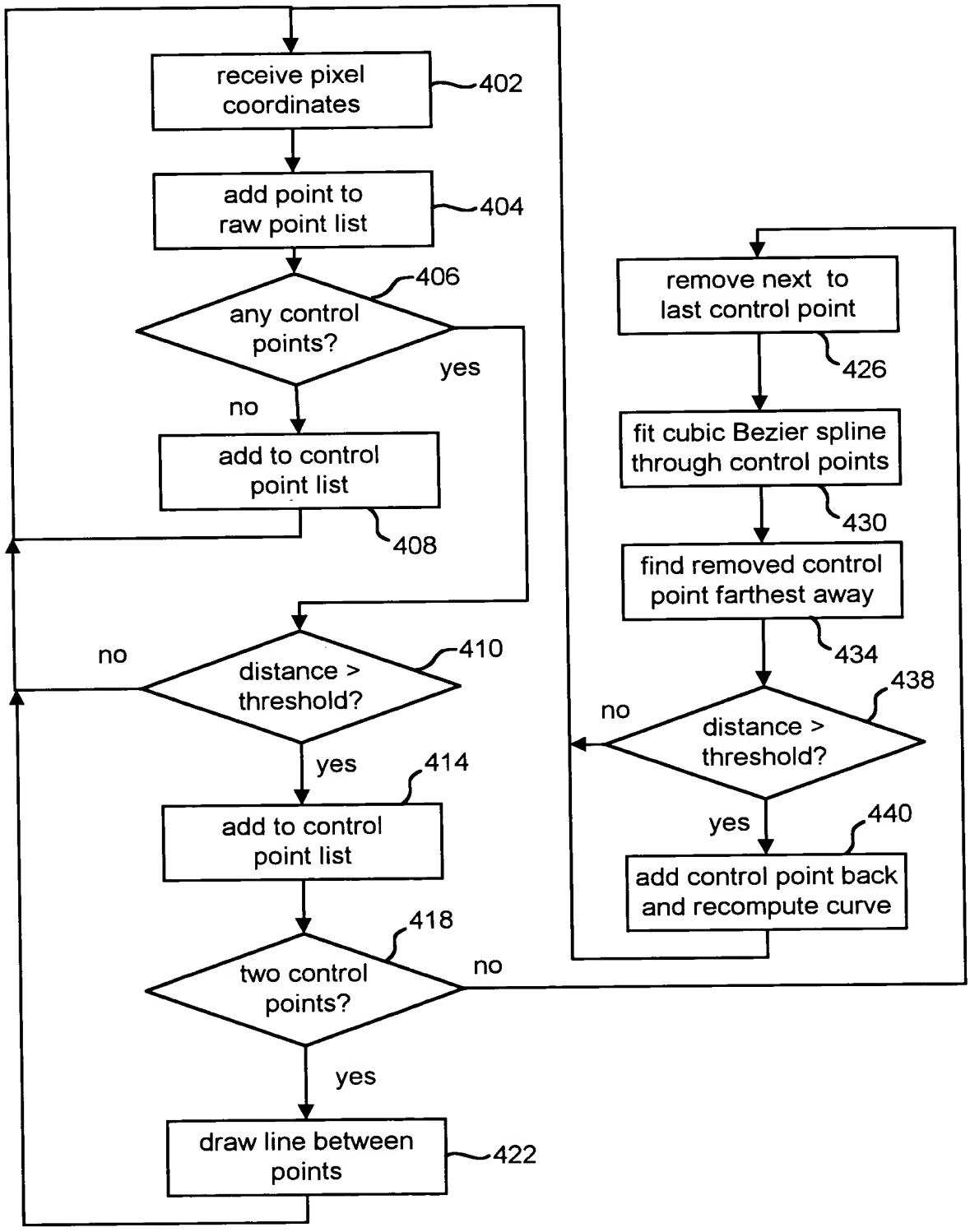
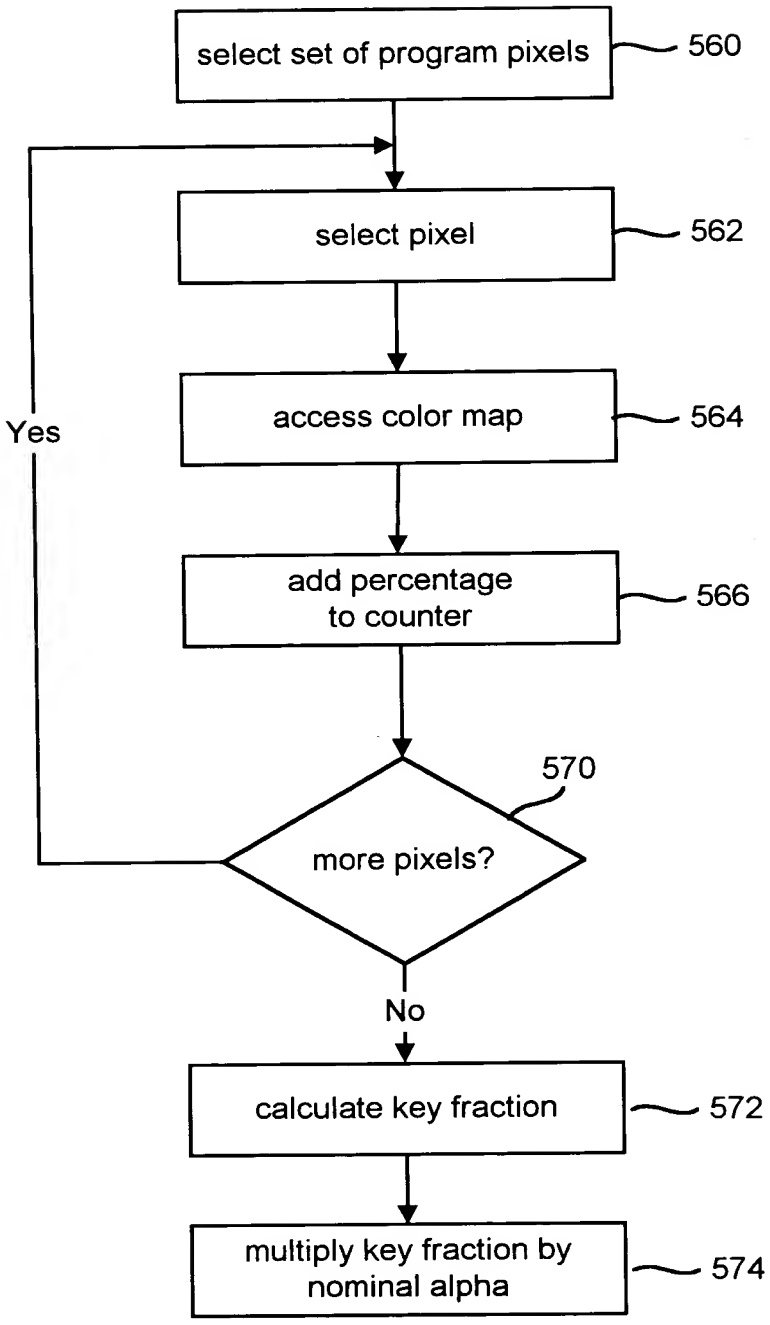

receive pixel coordinates
402
add point to raw point list
404
any control points?
406
yes
no
add to control point list
408
distance > threshold?
410
no
yes
add to control point list
414
two control points?
418
no
yes
draw line between points
422
remove next to last control point
426
fit cubic Bezier spline through control points
430
find removed control point farthest away
434
distance > threshold?
438
no
yes
add control point back and recompute curve
440

Fig. 10


select set of program pixels
560
select pixel
562
access color map
564
add percentage to counter
566
570
more pixels?
Yes
No
calculate key fraction
572
multiply key fraction by nominal alpha
574